

KU

DEPARTMENT OF BIOSTATISTICS & DATA SCIENCE

The University of Kansas Medical Center

Edwards Campus

GRADUATE PROGRAM STUDENT HANDBOOK



University of Kansas Graduate Program in Applied Statistics, Analytics & Data Science Student Handbook Acknowledgment Form

I, _____, have reviewed and read the **KU Graduate Program in Applied Statistics, Analytics & Data Science Student Handbook**. I understand that as a graduate student at the University of Kansas, I am expected to uphold the program's policies and that failure to do so may result in disciplinary action.

I understand that as the KU program in Applied Statistics, Analytics & Data Science evolves over time, policies may be amended and/or added. I will be informed of such changes as they take effect, as well as annually at the beginning of the Fall Semester.

I also understand that should I have any problems or questions regarding the policies as they are presented in this handbook, I may direct them to the Program Director or Coordinator.

_____(Signature)

_____(Date)

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Letter from the Chair

Dear Student,

On behalf of the faculty and staff, welcome to the Department of Biostatistics & Data Science Graduate Program in Applied Statistics, Analytics & Data Science! We're glad you're here and we're pleased that you have chosen to pursue a career in statistics.

The following information is designed to serve as an introduction to the Graduate Program in Applied Statistics, Analytics & Data Science offered through the KU Edwards campus and partially funded by the Education and Research Triangle. We will provide resources that will serve to assist you in making a smooth transition into student life. Throughout the coming year, we'll be taking an exciting journey together as we enhance our masters and graduate certificate programs. We'll all be doing some hard but rewarding work in the online classroom and in the field. Keep in mind, this journey may not be an easy one. We will all be challenged to work in new and different ways, and will be asked to stretch in order to increase what we know and what we learn.

In closing, please remember that the faculty, staff and I are here to assist you in succeeding in this phase of your career. We want you to succeed, both here and wherever your career path leads. Do not hesitate to call on us when you need assistance—that is what we are here for!

Again, welcome to the Applied Statistics, Analytics & Data Science Programs! May you each have a rewarding and productive year ahead.

Best regards,



Matthew S. Mayo, PhD, MBA
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Associate Director for Shared Resources, The University of Kansas Cancer Center The
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MS and Graduate Certificate Programs in Applied Statistics, Analytics & Data Science

Statistics is the exciting and rapidly-growing science of "learning from data, and of measuring, controlling, and communicating uncertainty." (Davidian and Louis, 10.1126/science.12118685). Statistical methods are developed and applied to research in science, technology, engineering, mathematics (STEM), medicine, industry, and business fields, among many others. Statisticians play essential roles in designing the studies, analyzing data, disseminating findings, and creating new methods for addressing problems.

As science and technology progress and new ways to measure and collect information become possible, new statistical techniques must be developed and applied. With the breathtaking pace of science and technology, the skills of statisticians are especially in demand because of new advances in STEM and medical fields and in the collection, storing, and management of "Big Data".

Our innovative MS and Graduate Certificate programs help meet the ever-increasing demand for statisticians and data scientists needed to take leadership roles in academia, government and industry. The course work, seminars and collaborative research experiences have been designed so that our graduates acquire the knowledge and expertise that allows them to work at the frontier of their field.

Our faculty members are active researchers collaborating and consulting in research projects and initiatives throughout the Medical Center, in addition to pursuit of their own research agendas and participation in curricular instruction. Expertise in the department includes linear, nonlinear, and longitudinal modeling, clinical trial and experimental design, survival analysis, categorical data analysis, robust statistics, psychometric methods and Bayesian methodology.

MS in Applied Statistics, Analytics & Data Science

Program Overview

The online Master of Science in Applied Statistics, Analytics & Data Science is designed to provide graduates with hands-on statistical computing skills, emphasizing proper application and problem solving. In fact, many of the most employable graduate degrees involve statistics. In response to workforce demand, there are three areas of emphasis:

- **Analytics** will provide graduates with experience working with and analyzing large datasets using several of the most common statistical software tools.
- **Statistics** will emphasize hands-on statistical computing in the context of statistical methods commonly applied in industry and government agencies.
- **Data Science** will provide graduates with experience in data acquisition, visualization, and machine learning.

All coursework can be completed online, providing flexibility for working professionals. The degree of Master of Science in Applied Statistics, Analytics & Data Science prepares graduates for careers in the rapidly growing fields of statistics, biostatistics and data analytics.

Degree Requirements

The program consists of 30 credit hours organized into three sections: required foundation, area of emphasis and electives. A minimum GPA of 3.0 on a 4.0 scale is required.

Required Foundation (12 credit hours)

STAT 805: Professionalism, Ethics and Leadership in the Statistical Sciences
STAT 835: Categorical Data Analysis
STAT 840: Linear Regression
STAT 850: Multivariate Statistics

The emphasis areas also require 12 credit hours of topic-focused coursework followed by 6 credit hours of electives.

Statistics Emphasis (12 credit hours)

STAT 820: SAS Programming I
STAT 825: Nonparametric Methods
STAT 830: Experimental Design
STAT 871: Mathematical Statistics

Analytics Emphasis (12 credit hours)

STAT 820: SAS Programming I
STAT 823: Introduction to Programming and Applied Statistics in R

STAT 830: Experimental Design
STAT 880: Data Mining and Analytics

Data Science Emphasis (12 credit hours)

STAT 823: Introduction to Programming and Applied Statistics in R
DATA 824: Data Visualization and Acquisition
STAT 880: Data Mining and Analytics
DATA 881: Statistical Learning I

Electives (6 credit hours)

Any course listed in one of the emphasis areas, plus

STAT 818: Introduction to R (1 credit hour)
STAT 821: SAS Programming II
STAT 833: Measurement for Statisticians
STAT 845: Survival Analysis
DATA 817: Introduction to Tableau (1 credit hour)
DATA 819: Introduction to Python (1 credit hour)
DATA 822: Introduction to SQL (1 credit hour)
DATA 882: Statistical Learning II

Annual Evaluations

Students are evaluated each term by their graduate advisor and the director of the graduate program. These evaluations provide feedback to the student regarding the progress that they are making in a variety of areas: meeting program requirements, classroom performance, and research performance.

Graduate Examination

Applied Masters Comprehensive Examination: The Applied Masters Comprehensive Examination is given during the final semester of enrollment. The examination has two purposes: to assess the student's strengths and weaknesses; and to determine whether the student should be awarded the MS degree.

Academic grade standards for MS students

Good academic standing requires maintaining a GPA of at least 3.0 with no letter grade below a C and no more than two courses with a C letter grade in all STAT/DATA courses. Students who do not maintain good academic standing will undergo review by the Assistant Director of Graduate Studies and the Department Chair. If at any time a student receives a letter grade below a C or 3 or more letter grades at a C or below, they will be formally removed from the program. If they received one or two letter grades of a C and their GPA is below 3.0, they will be placed on departmental academic probation and will have their status reviewed at the end of the following semester. If they receive one or two letter grades of a C and their GPA is at or above a 3.0, they will remain in good standing.

Graduate Certificate in Applied Statistics

Program Overview

The online Graduate Certificate in Applied Statistics will emphasize hands-on statistical computing in the context of statistical methods commonly applied in industry and government agencies. It is a five class series and all coursework can be completed online, providing flexibility for working professionals. The program consists of 15 credit hours. A minimum GPA of 3.0 on a 4.0 scale is required for completion of the graduate certificate.

Certificate Requirements

Required Courses (15 credit hours)

STAT 823: Introduction to Programming and Applied Statistics in R **or** STAT 820: SAS Programming I
STAT 835: Categorical Data Analysis
STAT 840: Linear Regression
STAT 850: Multivariate Statistics
STAT 830: Experimental Design **or** STAT 880: Data Mining and Analytics

Annual Evaluations

Students are evaluated each term by their graduate advisor and the director of the graduate program. These evaluations provide feedback to the student regarding the progress that they are making in a variety of areas: meeting program requirements, classroom performance, and research performance.

Academic grade standards for Graduate Certificate students

Good academic standing requires maintaining a GPA of at least 3.0 with no letter grade below a C and no more than two courses with a C letter grade in all STAT/DATA courses. Students who do not maintain good academic standing will undergo review by the Assistant Director of Graduate Studies and the Department Chair. If at any time a student receives a letter grade below a C or 3 or more letter grades at a C or below, they will be formally removed from the program. If they received one or two letter grades of a C and their GPA is below 3.0, they will be placed on departmental academic probation and will have their status reviewed at the end of the following semester. If they receive one or two letter grades of a C and their GPA is at or above a 3.0, they will remain in good standing.

Graduate Certificate in Applied Data Science

Program Overview

Through a series of five classes, the online Graduate Certificate in Applied Data Science is designed to equip students with skills in statistical and computational methods for the acquisition and analysis of Big Data. All coursework can be completed online, providing flexibility for working professionals. The program consists of 15 credit hours. A minimum GPA of 3.0 on a 4.0 scale is required for completion of the graduate certificate.

Certificate Requirements

Required Courses (15 credit hours)

STAT 823: Introduction to Programming and Applied Statistics in R **or** STAT 820: SAS Programming I

DATA 824: Data Acquisition and Visualization

STAT 840: Linear Regression

STAT 850: Multivariate Analysis

STAT 880: Data Mining and Analytics **or** DATA 881: Statistical Learning I

Annual Evaluations

Students are evaluated each term by their graduate advisor and the director of the graduate program. These evaluations provide feedback to the student regarding the progress that they are making in a variety of areas: meeting program requirements, classroom performance, and research performance.

Academic grade standards for Graduate Certificate students

Good academic standing requires maintaining a GPA of at least 3.0 with no letter grade below a C and no more than two courses with a C letter grade in all STAT/DATA courses. Students who do not maintain good academic standing will undergo review by the Assistant Director of Graduate Studies and the Department Chair. If at any time a student receives a letter grade below a C or 3 or more letter grades at a C or below, they will be formally removed from the program. If they received one or two letter grades of a C and their GPA is below 3.0, they will be placed on departmental academic probation and will have their status reviewed at the end of the following semester. If they receive one or two letter grades of a C and their GPA is at or above a 3.0, they will remain in good standing.

Applied Statistics, Analytics & Data Science

Course Catalog

Courses are not offered every semester.

STAT 655 Foundations of Mathematics for Data Science (3)

Topics in single- and multiple-variable differential and integral calculus and linear algebra with applications in statistics and data science. Mathematical concepts including limits, derivatives, integrals, sequences, series, vectors, matrices, and optimization problems will be covered in the context of statistical applications. Prerequisite: College algebra or equivalent.

STAT 805 Professionalism, Ethics and Leadership in the Statistical Sciences (3)

This web-based course addresses issues in professionalism, leadership and ethics that are specific to students training to become statisticians, biostatisticians, and data scientists. Topics include use of sound statistical methodology, common threats to valid inference, effective communication and collaboration with content-area experts, maintaining transparency and independence, reproducible research, the publishing process (including authorship guidelines, plagiarism, peer review, intellectual property, etc.), conflict of interest, data security, and properties of effective leaders, among others. Prerequisite: By permission of instructor.

STAT 818 Introduction to R (1)

This course will provide students with the opportunity to learn applied statistics using R statistical programming language. Students will become proficient in the use of the R programming environment for applied statistical problems. At the end of this course, students should be able to use basic R commands, efficiently navigate the R help, import, export, visualize, manage and manipulate data, describe data using univariate test statistics, and create simple, efficient scripts and functions. Prerequisite: By permission of instructor.

STAT 820 SAS Programming I (3)

This is a graduate level course preparing a student for the SAS base programming certification exam. We will cover the topics required for a student to pass the SAS base programming certification exam given by SAS. To this end, topics we will study will include, referencing files and setting options, creating list reports, understanding data step processing, creating and managing variables, reading and combining SAS data sets, do loops, arrays, and reading raw data from files. After the completion of the course the student should be able to create SAS programs to read data from external files, manipulate the data into variables to be used in an analysis, generate basic reports showing the results, be able to understand and explain results from univariate analyses using proc univariate. Prerequisite: By permission of instructor.

STAT 821 SAS Programming II (3)

This is a graduate level course preparing a student for the SAS advanced programming certification exam. We will cover the topics required for a student to pass the SAS

advanced programming certification exam given by SAS. To this end, topics we will study include array processing, use of data step views, using the data step to write SAS programs, efficient use of the sort procedure, introduction to the macro language in SAS, and accessing data using SAS PROC SQL. After the completion of the course, the student should be able to create SAS programs to read data from external files, manipulate the data into variable to be used in an analysis, generate basic reports showing the results.

Prerequisite: STAT 820 or equivalent (SAS Certified BASE programmer for SAS or at least one year of experience as a data analyst/programmer)

STAT 823 Introduction to Programming and Applied Statistics in R (3)

This course will provide students with the opportunity to learn advanced statistical programming. The development of new statistical or computational methods often implies the development of programming codes to support its application. Much of this type of development is currently carried out in the R (or S-Plus) language. Indeed much of the recent development of statistical genetics is based on the R programming language and environment. This course provides an introduction to programming in the R language and its applications to applied statistical problems. Prerequisites: Some previous exposure to computer programming. Some basic statistics at the Applied Regression or Applied Design level and permission of instructor.

STAT 825 Nonparametric Methods (3)

This course is an introduction to nonparametric statistical methods for data that do not satisfy the normality or other usual distributional assumptions. We will cover most of the popular nonparametric methods used for different scenarios, such as a single sample, two independent or related samples, three or more independent or related samples, goodness-of-fit tests, and measures of association. Power and sample size topics will also be covered. The course will cover the theoretical basis of the methods at an intermediate mathematical level and will also present applications using real world data and statistical software.

Prerequisite: By permission of instructor.

STAT 830 Experimental Design (3)

The emphasis of this course is on learning the basics of experimental design and the appropriate application and interpretation of statistical analysis of variance techniques.

Prerequisite: By permission of instructor; STAT 820 or STAT 823 recommended.

STAT 833 Measurement for Statisticians (3)

This course aims to introduce the theory and applications of measurement and psychometrics to students in the statistical sciences. The goal is for students to master the concepts of measurement theory, classical/modern test theory, reliability and validity, factor analysis, structural equation modeling, item response theory, and differential item functioning. Prerequisites: STAT 835, or by permission of instructor.

STAT 835 Categorical Data Analysis (3)

This course provides an understanding of both the mathematical theory and practical applications for the analysis of data for response measures that are ordinal or nominal categorical variables. This includes univariate analysis, contingency tables, and generalized

linear models for categorical response measures. Regression techniques covered for categorical response variables, such as logistic regression and Poisson regression methods, will include those with categorical and/or continuous explanatory variables, both with and without interaction effects. Prerequisite: By permission of instructor; STAT 820 or STAT 823, and 840 are recommended.

STAT 840 Linear Regression (3)

This course is an introduction to model building using regression techniques. We will cover many of the popular topics in Linear Regression including: simple linear regression, multiple regression, model selection and validation, diagnostics and remedial measures. Prerequisite: By permission of instructor.

STAT 845 Survival Analysis (3)

This course provides an understanding of both the mathematical theory and practical applications for the analysis of time to event data with censoring. This includes univariate analysis, group comparisons, and regression techniques for survival analysis. Parametric and semi-parametric regression techniques covered will include those with categorical and/or continuous explanatory variables, both with and without interaction effects. Prerequisites: STAT 820 or STAT 823, 835, 840, and 871, or by permission of instructor.

STAT 850 Multivariate Statistics (3)

This course will introduce the theory and methods of applied multivariate analysis. Topics include multivariate model formulation, multivariate normal distribution, Hotelling's T-square, multivariate analysis of variance, repeated measures analysis of variance, growth curves, discriminant analysis, classification analysis, principal components analysis, and cluster analysis. Prerequisites: STAT 820 or STAT 823, and STAT 840, or by permission of the instructor.

STAT 871 Mathematical Statistics I (3)

This course introduces the fundamentals of probability theory, random variables, distribution and density functions, expectations, and transformations of random variables, moment generating functions, convergence concepts, sampling distributions, and order statistics. Prerequisite: By permission of instructor.

STAT 880 Data Mining and Analytics (3)

Students will be introduced to common steps used in data mining, such as assessing and assaying prepared data; pattern discovery; predictive modeling using decision trees, regression, and neural networks; and model assessment methods. Prerequisites: STAT 820 or STAT 823, STAT 835, and STAT 840, or by permission of instructor. STAT 850 is recommended.

DATA 817 Introduction to Tableau (1)

Under Tableau Desktop - I specialization, the student will discover what data visualization is, and how to use it use to better display and understand the information within a data set. Using Tableau, this course will examine the fundamental concepts of data visualization and explore the Tableau Desktop interface, identifying and applying the various tools

Tableau has to offer. By the end of the course, students will be able to prepare and import data into Tableau and explain the relationship between data analytics and data visualization. This course is designed for learners who have never used Tableau before, those in need of a refresher, or those wanting to explore Tableau in more depth. No prior technical or analytical background is required. The course will guide students through the steps necessary to create visualization dashboard and story from the beginning based on data context, setting the stage for students to be ready for Desktop – I certification. Prerequisite: There are no formal prerequisites for this course. Prior experience generating plots, tables, graphs, etc. is helpful, but is not required. By permission of instructor.

DATA 819 Introduction to Python (1)

This is a one credit hour introduction course to programming in Python. The fundamentals of Python programming, including: introduction to Python syntax, types, data structures, control of flow, functions, modules and packages, reading and writing files, and basic statistics will be covered throughout the course. Prerequisite: By permission of instructor.

DATA 822 Introduction to SQL (1)

This course prepares students to interact with most dialects of Structured Query Language (SQL). At the conclusion of the course, students will be prepared to interact with any major database, including PostgreSQL, MySQL, Oracle, among others. Topics covered include relational databases, structure of data, Data Definition Language (DDL), Data Manipulation Language (DML), table joins, data summarization, and writing and interpreting SQL queries. Prerequisite: By permission of instructor.

DATA 824 Data Visualization and Acquisition (3)

Being a data scientist requires an integrated skill set that spans the domains of statistics, machine learning, and computer programming. It also demands a solid foundation in the principles of data visualization in order to create effective data presentations that convey the intended message. Put simply, data visualization describes any effort to assist an individual's understanding of the significance of data by placing it in a visual context. In this course, students will be introduced to principles of effective data visualization and tools commonly used for its implementation. Techniques and strategies for visualizing different types of data (e.g., numeric data, non-numeric data, spatial-temporal data, etc.), the use of space and color to visually encode data, interactive visualizations, acquiring and visualizing data from publicly available data repositories, data cleaning and standardizing, are examples of some of the topics this course will address. The focus in the treatment of these topics will be on breadth, rather than depth, and emphasis will be placed on integration and synthesis of concepts and their application to solving problems. Prerequisite: While there are no formal prerequisites for this course, students should have a basic familiarity with the R statistical programming language (STAT 823 highly recommended). Prior experience using statistical software (e.g., R) to generate plots, tables, graphs, etc. is helpful, but is not required. LEC.

DATA 881 Statistical Learning I (3)

Statistical learning is a fundamental skill for data scientists. Data scientists are specialists in “drinking from the firehose” of big data, and statistical learning techniques are some of their key tools. This course focuses on applications of statistical learning to big data challenges through data mining and predictive modeling techniques that are in great demand. Students will be introduced to the basics of statistical/machine learning: supervised learning (e.g. linear model, nonlinear models, penalized methods, ensemble methods, etc.), unsupervised learning (e.g. K means clustering, nearest neighbors, hierarchical clustering, etc.), and missing data in machine learning. Throughout the course, we will learn how to be “informed doers”, who not only know how to apply methods but understand how those methods work. This understanding can be critical to getting good results from big data, so that the limitations of certain methods are properly understood. Prerequisites: STAT 835, STAT 840, or by permission of instructor

DATA 882 Statistical Learning II (3)

Knowledge of how and when to apply more sophisticated statistical learning models to big data can make a data scientist an indispensable asset to a research team. In Statistical Learning 2, we will learn how to be “informed doers”. We will learn how many of the covered methods work, in addition to the proper situations to apply them. This is particularly important in this course, because these methods are applicable when simpler methods are inappropriate and rarely work well without significant tinkering. Data scientists with mastery of these methods are empowered to investigate questions that are far too complex to answer with the more general “workhorse” methods covered in the first unit of this series, Statistical Learning 1. We will cover many of the most important techniques in use today, including: mixture models, hidden Markov models, spline regression, support vector machines, advanced discriminant analysis methods, neural networks (including deep learning), and methods for handling highly complex computation, such as Hadoop. The course culminates with a short project that will pull together all the skills you have learned to demonstrate how they can be used for statistical decision support, which is a common task for data scientists. Prerequisites: DATA 881, or by permission of instructor

Student Computing Lab

The Student computing lab is located in the common area of the first floor of BEST Hall at the KU Edwards Campus. The lab consists of 12 computer terminals that students are allowed to utilize for their studies. The computers have programs installed on them such as SAS, R, RStudio, as well as other typical software needed for course work.

Computer Lab Hours:

Monday – Thursday	8 a.m. to 10:30 p.m.
Friday – Saturday	8 a.m. to 5 p.m.
Sunday	1 to 5 p.m.

Student Compliance Training

All KUMC students are required to complete annual compliance training during the student training window. Failure to complete the training will result in a hold being placed on your student account that will prevent future enrollment until the training is completed.

The training is completed online at [myKUMC](#). Once you have logged into my KUMC, navigate to the **Training** tab. The following modules are required for students:

- **Computer Security Training**
- **Harassment Tutorial (full or refresher student version)**
- **HIPPA Training (student or employee version)**
- **University/UKP Safety Training (student version)**

Once you have logged in and completed your training, **please send an email** to the Education Coordinator, Sarah Dahlstrom at sdahlstrom@kumc.edu verifying that you have completed the training and the date that you have done so. This is a mandatory requirement for the Biostatistics & Data Science Department at KUMC.

Enroll and Pay

Enroll and Pay is the student information system used at KUMC for:

- Admissions
- Enrollment
- Bills and Payments
- Financial Aid
- Curriculum Management
- Class Rosters
- Grading
- Academic Records
- Emergency contacts

Students may log on to Enroll and Pay at: <http://sis.ku.edu> using their KUMC Network/GroupWise username and password.

Please go to <http://sis.ku.edu> for student tutorials on how to sign-in and navigate the system, how to enroll, how to view course schedules and course grades, online payments, navigating financial aid, and how to update personal and contact information

Blackboard

Blackboard is a course management tool that allows instructors to create web-based courses. Students must have a valid KU Online ID and password to access the courses created in Blackboard.

To login to Blackboard

1. Go to <https://courseware.ku.edu/>
2. Students will login with their KU Online ID and password. You will have one Blackboard account for all Blackboard courses while at KU. If you have difficulty

logging in, contact KU IT Educational Technologists at 785-864-2600 or blackboardsupport@ku.edu during business hours, or KU IT Customer Service Center at 785-864-8080 or itcsc@ku.edu after hours.

3. Once in Blackboard you will see a list of all the courses that you are enrolled in. Note: courses will appear anywhere between a week before the semester begins and the first day of class.
4. Click on the course title (under Courses) to go to a course home page.

Blackboard E-Learning Guide: <https://blackboard.ku.edu/students/resources>

Student Services

The KUMC Division of Student Services contributes to the academic mission of the university with quality student-centered programming and services that support the emotional, intellectual, personal and professional growth of our individual students. The primary goal of the division is to provide essential support services that assist students as they pursue their academic goals, and coordinate student services to ensure that they are efficient, accessible and "user-friendly." For more information on the Student Service Departments, please refer to: www.kumc.edu/student-services.html.

Student Service Departments include:

- Career Services
- Counseling & Education Support Services
- Kirmayer Fitness Center
- Enrollment Services
- Student Financial Aid
- Office of Student Life
- Student Health Insurance
- Student Health Services
- Academic Accommodations

Equal Opportunity and Nondiscrimination

The Applied Statistics, Analytics & Data Science program and the University of Kansas Medical Center are committed to ensuring equal opportunity. Detailed information about equal opportunity and non-discrimination policies are outline on the Institutional Opportunity & Access website at <http://ioa.ku.edu/>. If any student identifies the need for services, they are asked to contact:

- Equal Opportunity/ Disability Services in 1040 Wescoe, 913.588.1206 (voice) / 913.588.7963 (TDD), or Student Counseling and Educational Support Services in G116 Student Center, 913-588-6580.

The University of Kansas Medical Center is committed to ensuring equal opportunity. Its [equal opportunity/nondiscrimination policy](#) is designed to ensure that employees, students, residents, faculty and supervisors understand their rights and responsibilities. The University's [discrimination complaint procedure](#) is designed to ensure that concerns are handled in a timely and responsive manner. For inquiries regarding the University's EO/nondiscrimination policies, contact the [EOO Office](#), 1054 Wescoe, 913- 588-1206 (V) or 913-588-7963 (TDD).

- What is [Equal Opportunity](#)?
- Who is [responsible for Equal Opportunity](#)?

What is Equal Opportunity?

Equal Opportunity is a legal right of all persons to be accorded full and equal consideration on the basis of merit regardless of [protected class](#) with regard to:

- all terms and conditions of employment (e.g., hiring, promotion, layoff, demotion, termination, access to training)
- access to educational programs, services and activities
- admissions
- academic evaluation and advancement
- financial aid
- athletics

Who is responsible for ensuring equal opportunity?

The policies and procedures adopted by the University of Kansas Medical Center in December 1998 reflect the following philosophy toward equal opportunity at the University of Kansas Medical Center.

- Deans, Vice Chancellors, departmental directors and chairs, and their designees are partners with the Equal Opportunity Office in ensuring equal opportunity for students, residents, employees and faculty.
- The University is proactive rather than reactive regarding issues and situations that may compromise its public image, conflict with its commitment to valuing diversity, or create legal liability.
- University practices governing recruitment and selection, promotion, termination,

and disability accommodation are written, readily available, and monitored to ensure compliance.

- Response protocols are consistent and timely, ensure due process for all parties, and involve appropriate University officials at the appropriate stage.

In practical terms, the following University officials are responsible for ensuring equal opportunity and preventing discrimination.

Deans, Vice Chancellors, Directors, Chairs and Designees

- Understand and adhere to University policies
- Ensure that employees, including faculty, students and residents understand their equal opportunity/ nondiscrimination rights and responsibilities
- Ensure that academic and employment decisions are based on legitimate, nondiscriminatory criteria
- Provide reasonable accommodation for religious beliefs and the known disabilities of qualified individuals in consultation with the Equal Opportunity/Disability Specialist
- Monitor the environment in which students and employees learn and work
- Actively address behaviors and actions which may create a hostile work or learning environment, in consultation with the EOO
- Respond to complaints of discrimination, including sexual harassment, in consultation with the EOO
- Ensure the success of AA programs

Equal Opportunity Office

- Establish policies, procedures and notification statements which conform to legal/judicial mandates
- Disseminate policies and procedures
- Educate campus community about EO/nondiscrimination rights and responsibilities
- Provide advice and consultation to university officials
- Coordinate and oversee receipt, analysis and provision of disability accommodations
- Work with department heads and supervisors to respond at the earliest and most informal level regarding situations or behaviors that may involve discrimination
- Investigate discrimination complaints
- Monitor recruitment and selection, personnel actions and terms/conditions of employment
- Receive applicant data and conduct statistical analyses for federal reporting
- Review job qualifications to ensure nondiscrimination
- Ensure that accurate workforce profiles are maintained and analyzed
- Prepare and disseminate the annual AA Plan.

Dropping an Individual Course / Canceling or Withdrawing From all Your Classes

You can drop individual classes online via Enroll and Pay through the withdrawal deadline. Login to Enroll and Pay, navigate to the Student Center, select Drop a Class, and follow the instructions.

If you are dropping your last class, it is considered a cancellation or withdrawal. Canceling/Withdrawing from all of your classes must be approved by your academic department and Graduate Studies/International Programs (if applicable).

- Dropping all of your classes before the first day of classes is considered a **Cancellation**.
- If you want to cancel a future semester, this is considered a **Cancellation from Future Semester** and must be done before the first day of classes.
- Dropping all of your classes after the semester has started is considered a **Withdrawal**.

For important dates and further instructions, see the following website: <http://www.kumc.edu/student-services/enrollment-services/current-students/dropping-and-withdrawing-from-classes.html>.

Incomplete Grade Request

A student may request an Incomplete (I) grade if the student experiences an extenuating circumstance beyond the student's control which impacts his/her ability to complete all coursework before the end of the term. For an Incomplete grade to be given, the student must be passing at the time of the request or must be sufficiently close to passing for the instructor to believe that, upon completion of the work, the student will pass the course. The granting of an incomplete grade is at the discretion of the instructor and the Department. Having an incomplete may impact your ability to enroll in additional STAT or DATA courses.

As stated in the University Senate Rules and Regulations, Article II, Section 2.2.3.2: "A student who has an I posted for a course must make up the work by the date determined by the instructor, in consultation with the student, which may not exceed one calendar year, or the last day of the term of graduation, whichever comes first. An I not removed according to this rule shall automatically convert to a grade of F, or the lapse grade assigned by the course instructor, and shall be indicated on the student's record." In order to request an incomplete grade, the student must submit the completed form to the Department and instructor no later than the last day of the term.

Taking Time Off/Reactivation

Because of the nature of the Applied Statistics, Analytics & Data Science online programs, students are not required to be continuously enrolled. If you decide to take a semester off, please contact the Assistant Director of Graduate Education, Shana Palla (spalla@kumc.edu) or Education Coordinator, Sarah Dahlstrom (sdahlstrom@kumc.edu). On the 20th day of the term you take off, your email account will be deactivated. To reactive your account, you will need to contact our office and complete the reactivation form found here: <http://www.kumc.edu/reactivationform/>.

Once your reactivation request is approved, your email account will be reactivated. In order to avoid a possible late enrollment fee, this form should be submitted at least one month prior to the first day of class of the term for which you are returning; however, you may complete the form earlier if you prefer.

Leave of Absence (LOA) from the University

If you have an extenuating circumstance which will require you to take off more than two consecutive semesters, the Office of Graduate Studies may grant a leave of absence (LOA) from an academic program for up to one academic year, with the possibility of extension. The student must complete the official Leave of Absence Checklist. A leave of absence may be granted in extraordinary circumstances (e.g. cases of illness, emergency, financial hardship, military leave, pregnancy/childbirth), to pursue family responsibilities, or to pursue full-time activities related to long-range professional goals. The LOA request must be submitted at the beginning of the semester. Evidence of progress toward degree will also be a determining factor in the decision to grant a leave. If the leave of absence is approved at the program level, the program forwards the student's request along with the program's recommendation to the Dean of Graduate Studies for approval. If approved by the Dean of Graduate Studies, the time on leave from the academic program will not be counted toward the maximum time granted to complete a degree (doctoral, 8 years; master's, 7 years).

All steps to complete a leave request are outlined on the Leave of Absence Checklist. First, students discuss the leave with their mentor/advisor and/or their Program Director. If those administrators believe that the leave is the best path forward for the student, the student completes the official Leave of Absence Checklist. Second, students meet with individuals in the Registrar's Office and Financial Aid to verify understanding of how the leave could impact their enrollment, access to campus resources, health insurance, and/or loans. Third, the student completes the section of the form asking for details about their leave and how they can be contacted. Fourth, the student returns the form to their Program

Director for a second signature that acknowledges the student completed all steps. The form is then forwarded to the Dean of Graduate Studies for a final approval. After the Dean of Graduate Studies approves the Leave of Absence form, the form is forwarded to the Office of the Registrar to be recorded in the student's academic record.

When a student is ready to return from an LOA, the student must complete the Request for Return from Leave of Absence Checklist. The form requires the student to complete information about when they will return as well as a signature from the Program Director. After the Program Director approves the Return LOA Checklist, the Program Director will send the form to the Office of Graduate Studies. The Office of Graduate Studies will review and respond with an approval via email. Then, the Office of Graduate Studies will send the form to the Office of the Registrar to reactive the student in Enroll and Pay.

The Requests for Leave of Absence Checklist and for Return from Leave of Absence checklists are on the Graduate Studies Policies and Regulations page of their department website.

Graduate Student Professional Development/Travel Award

Professional Development Award

Professional Development Awards are given four times a year through a competitive application process. Graduate students who are accepted to present at a regional or national scientific meeting are eligible to apply. These awards may be a maximum of \$550. Deadline: The first working day of the following months: January, April, July and October.

Completed applications should be submitted to the Office of Graduate Studies, 5015 Wescoe, Mail Stop 1040. Questions, contact Matt Falk at (913) 588-1238 or by e-mail at mfalk@kumc.edu.

- Professional Development Award Application Criteria
- Professional Development Application Form - We are switching to a new form which will become available September 1st.

SGC Travel Awards

Graduate students may apply for travel awards for professional development made available through the KUMC Student Governing Council (SGC). Application for this award is managed by SGC, all questions regarding this award should be directed to SGC.

JCERT Scholarship

Students who currently live in Johnson County, Kan., and who are admitted to and enrolled in the online M.S. in Applied Statistics, Analytics & Data Science, the Graduate Certificate in Applied Statistics, or the Graduate Certificate in Applied Data Science are eligible for a reduced tuition scholarship through the Johnson County Education Research Triangle (JCERT). The Applied Statistics scholarship is renewable, and students must maintain a minimum cumulative KU grade point average of 3.5 within the program to receive funding for subsequent terms. Reapplication is required each term. Limited awards are available, and funds awarded are variable each term contingent on the number of qualified applicants. The application can be found at <https://learn.ku.edu/msap-jcertapplication>

KUMC Office of International Programs

In an interdependent world, International Programs believes that it is essential for faculty, students, and staff to have the opportunity to become personally and intellectually familiar with the people, ideas, and customs of other nations. Such interaction not only promotes a universal perspective and intellectual growth, but also contributes to the cultural and economic well-being of the university, the state, and the nation.

Student Services

The Office of International Programs offers a variety of activities and programs designed to provide informative and meaningful answers for a wide range of international student concerns, as well as provide a medium for open, respectful interaction in an informal and positive setting. Events offered through the Office of International Programs are coordinated by the ESL & Cultural Programs Coordinator. Please check the KUMC [events calendar](#) for upcoming activities and where they will be held.

[The KU Lawrence Cultural Events Calendar](#) also offers information that may interest international students on the Kansas City campus. Please note that non-activity related guidelines and programs listed on this site are specific to KU Lawrence and may not apply to international students on the Kansas City campus.

Student Services

All international applicants for study at the University of Kansas Medical Center whose native language is not English must demonstrate an established level of English language proficiency through either the TOEFL ([Test of English as a Foreign Language](#)) or the academic format of the IELTS ([International English Language Testing System](#)). The test must have been taken within two years of the first class at KU Medical Center.

International applicants who are citizens of the following countries, or who have earned Bachelor's or higher degrees from English-speaking accredited institutions in them do not have to submit TOEFL scores: United States, Great Britain, Ireland, Australia, New Zealand, or the English-speaking provinces of Canada.

Applicants from India and other recent British colonies **do** need to submit TOEFL scores even if English is their primary language. The TOEFL requirement may be waived on a case by case basis for students with proper documentation who have earned a degree from a foreign institution where the language of instruction was English. Academic departments have the right to establish more stringent requirements, if necessary.

Test scores must be **original** forms sent directly from the administering agency to KUMC. Photocopies will not be accepted. **ETS school code for KUMC: 6895**

Minimum English Language Scores for Regular Admission	
TOEFL (Internet-based)	IELTS
23 Listening Score 23 Reading Score 19 Writing Score	6.5 Overall Score 6.0 Score in each module

Although the Internet-based TOEFL includes a speaking component, a minimum score on the Speaking section is not required for many programs in the School of Allied Health. Provisional admission may be considered for applicants whose scores do not meet the requirements for regular admission. For scores from the computer-based or paper-based TOEFL, see the [KUMC Office of International Programs](#).

Admitted students not meeting the required minimum scores for regular admission may be required to test upon arrival at KUMC and may be required to enroll in one or more English courses at KU.

Map of KU Edwards Campus

